PB87-108858

Pesticide Fact Sheet Number 59: Actellic

(U.S.) Environmental Protection Agency
Washington, DC

30 Jun 85

U.S. Department of Commerce
National Technical Information Service
NTIS.

PB87-108858

REPORT DOCUMENTATION PAGE	1. REPORT NO.	2.	PB87-108858

4. Title and Subtitle
EPA Pesticide Fact Sheets - ACTELLIC No. 59

5. Report Date
Issued 6/30/85

6.

7. Author(s)
EPA, Office of Pesticide Programs, Registration Division

8. Performing Organization Rept. No.
540/FS-87- 014

9. Performing Organization Name and Address
US Environmental Protection Agency
Office of Pesticide Programs
Registration Division, TS-767C
401 M Street, S.W.
Washington, D.C. 20460

10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.
(C)
(G)

12. Sponsoring Organization Name and Address
Same as #9

13. Type of Report & Period Covered

14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

This document contains up-to-date chemical information, including a summary of the Agency's regulatory position and rationale, on a specific pesticide or group of pesticides. A Fact Sheet is issued after one of the following actions has occurred.

1. Issuance or reissuance of a registration standard,
2. Issuance of each special review document,
3. Registration of a significantly changed use pattern,
4. Registration of a new chemical, or
5. An immediate need for information to resolve controversial issues relating to a specific chemical or use pattern.

17. Document Analysis a. Descriptors
Pesticides, regulations, Chemical Information Fact Sheet, Use Patterns, Science Findings

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

REPRODUCED BY
U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL
INFORMATION SERVICE
SPRINGFIELD, VA. 22161

18. Availability Statement:
Publicly Available

19. Security Class (This Report)
Unclassified

21. No. of Pages
5

20. Security Class (This Page)
Unclassified

22. Price

(See ANSI-Z39.18) See Instructions on Reverse

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

United States
Environmental Protection
Agency

Office of Pesticides and Toxic Substances
Office of Pesticide Programs (TS-766C)
Washington, DC 20460

EPA Pesticide Fact Sheet

Name of Chemical: ACTELLIC
Reason for Issuance:
Date Issued: June 30, 1985
Fact Sheet Number: 59

1. DESCRIPTION OF CHEMICAL

Generic Name: O-[2-(diethylamino)-6-methyl-4-pyrimidinyl] O,O-dimethyl phosphorothioate

Common Name: Pirimiphos-methyl

Trade Name: Actellic

EPA Shaughnessy Code: 108102

Chemical Abstracts Service (CAS) Number: 29232-93-7

Year of Initial Registration: 1984

Pesticide Type: Insecticide

Chemical Family: Organophosphate

U.S. and Foreign Producers: ICI Americas, Inc., Imperial Chemical Industries, PLC., United Kingdom

2. USE PATTERNS AND FORMULATIONS

Application Sites: Stored grain products: corn, rice, wheat, and grain sorghum intended for export only

Types of Formulations: Emulsifiable concentrate

Types of Methods of Application: Sprays

Application Rates: 0.006 to 0.015 lbs. a.i. per 1000 lbs. of grain

Usual Carriers: petroleum solvents

3. SCIENCE FINDINGS

Summary Science Statement

Pirimiphos-methyl is an organophosphorothioate compound with moderate acute toxicity. This chemical has demonstrated adverse chronic effects. It is also a moderate toxicant to wildlife species, however the registered use precludes exposure to wildlife.

This chemical is toxic to fish, and other wildlife. The proposed use precludes any impact on endangered species.

In case of a significant chemical spill call (800) 426-9300 (CHEMTREC).

Chemical Characteristics

Physical State: Liquid

Color: Amber

Odor: Putrid- a typical organophosphorothioate odor. Odorless when pure

Molecular weight: 305 ($C_{11}H_{20}N_3O_3PS$)

Melting point: 15-18°C

Boiling point: Decomposes above 100°C

Vapor Pressure: 1.1×10^{-4} tor at 30°C

Flash Point: not reported

Solubility in various solvents: Solubility in water: 5 ppm at 30°C.
Miscible in all proportions with methanol, ethanol, chloroform, acetone, benzene, toluene and xylene.

Toxicology Characteristics

Acute Oral: 2050 mg/kg, Toxicity Category III

Acute Dermal: 1505 mg/kg, Toxicity Category II

Primary Dermal Irritation: No irritation, Toxicity Category III

Primary Eye Irritation: Corneal opacity persisted to 14 days. Toxicity Category III

Skin Sensitization: Not a sensitizer

Acute Inhalation: Uncharacterized. The use pattern precludes inhalation exposure.

Neurotoxicity: Not an acute delayed neurotoxic agent at doses up to 10 mg/kg/day for 90 doses.

Oncogenicity: Not shown to be an oncogen in rat or mouse studies at dose levels up to 300 and 500 ppm (highest dose tested), respectively.

Teratogenicity: The Agency has determined that this chemical is not teratogenic at levels up to 16 mg/kg/day, however, an additional study in a second species (rats) is still required.

Reproduction-3 generation: Two studies adequately demonstrate that pirimiphos-methyl does not produce reproductive effects. No effects were demonstrated at dose levels up to 100 ppm.

Metabolism: The studies suggest that pirimiphos-methyl is rapidly excreted and no evidence of bioaccumulation was noted.

Mutagenicity: This chemical has been determined to be non-mutagenic in all three required studies.

Physiological and Biochemical Behavioral Characteristics

Mechanism of Pesticidal Action: An insecticide which is active by contact, ingestion, and vapor action and causes phosphorylation of the acetylcholinesterase enzyme of tissues, allowing accumulation of acetylchloline at cholinergic neuro-effector junctions (muscarinic effects), and at skeletal muscle myoneural junctions and autonomic ganglia. Poisoning also impairs the central nervous system function.

Symptoms of poisoning include: headache, dizziness, extreme weakness, ataxia, tiny pupils, twitching, tremor, nausea, slow heatbeat, pulmonary edema, and sweating. Continual absorbtion at intermediate dosages may cause influenza-like illness which includes symptoms like weakness, anorexia, and malaise.

Metabolism and Persistence in Plants and Animals:

The metabolism of pirimiphos-methyl in plants and animals is not, at this time, adequately understood in order to establish a tolerance for grain crops.

Environmental Characteristics

Uncharacterized. This use pattern preclude exposure to the environment.

Ecological Characteristics

Avian oral:
Mallard duck--76.6 mg/kg

Ring necked pheasant--17.7 mg/kg

Avian dietary:
Mallard duck--633 ppm
Bobwhite quail--207 ppm

Freshwater Fish:
Coldwater fish (rainbow trout)--0.40 ppm
Warmwater fish (bluegill sunfish)--2.9 ppm

Acute Freshwater Invertebrates:
Daphnia--0.21 ppb

4. Tolerance Assessment

No domestic tolerances exist for this chemical. Tolerances for small grains have been proposed to support domestic consumption of treated grains. There is an established tolerance of 5 ppm for imported kiwifruit.

5. SUMMARY OF MAJOR DATA GAPS

- A second mamalian species (rat) teratology study.

6. CONTACT PERSON AT EPA

Jay S. Ellenberger
Product Manager (12)
Insecticide-Rodenticide Branch
Registration Division (TS-767C)
Office of Pesticide Programs
Environmental Protection Agency
401 M Street, S. W.
Washington, D. C. 20460

Office location and telephone number:
Room 202, Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, VA 22202
(703) 557-2386

DISCLAIMER: The information presented in this Chemical Information Fact Sheet is for informational purposes only and may not be used to fulfill data requirements for pesticide registration and reregistration.